

Abstract

The subject invention pertains to unique and advantageous systems for gasifying and/or liquefying biomass. The systems of the subject invention utilize a unique design whereby heat from a combustion chamber is used to directly gasify or liquefy biomass. In a preferred embodiment, the biomass is moved through a reactor tube in which all the gasification and/or liquefaction takes place. Preferably, char exits the biomass reactor tube and enters the combustion chamber where the char serves as fuel for combustion. The combustion chamber partially surrounds the reactor tube and is in direct thermal contact with the reactor tube such that heat from the combustion chamber passes through the reactor wall and directly heats the biomass within the reactor tube.